Nez Perce National Historical Park
Natural Resource Brief

National Park Service
U.S. Department of the Interior

Hydrological Study at Weippe Prairie, Idaho

Importance: Artificial drainage and its affects on a wet meadow ecosystem

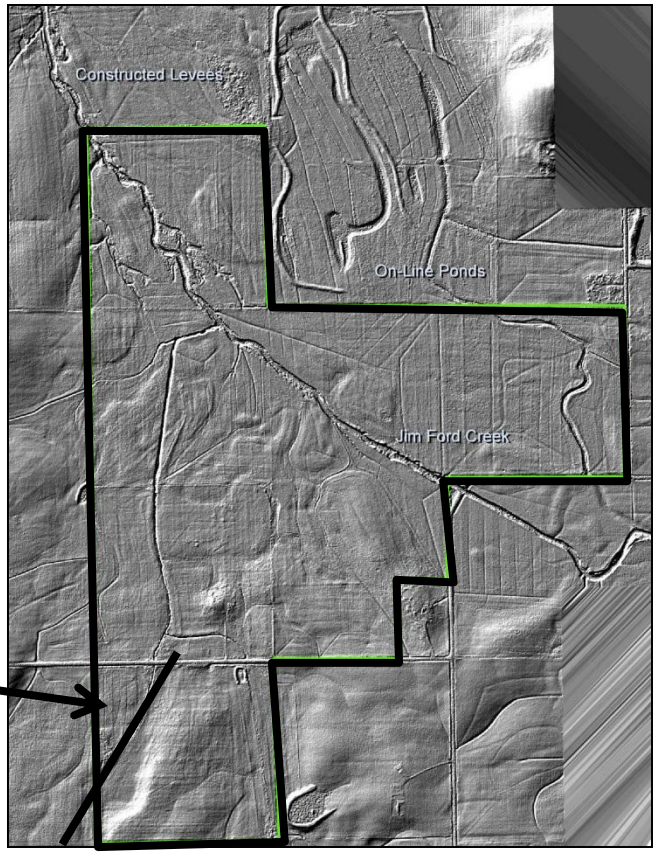
Over the past 100+ years Weippe Prairie has been used for hay production and livestock grazing, made possible by the construction of ditches to dry the meadows. European pasture grasses have also been introduced. Thus the hydrologic regime (defined as the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere) and vegetation of the prairie has changed dramatically from the condition described by the Nez Perce and members of the Lewis and Clark expedition. Nonnative and invasive plants are taking advantage of the disturbances at Weippe and are a threat to the camas-dominated meadow. Jim Ford Creek and the various drainage ditches that flow into the creek are worsening the soil drainage issue and causing erosion. Park managers are extremely concerned about the effects of artificial drainage and the rapid pace of nonnative plant invasion on camas populations at Weippe Prairie. Therefore, understanding the current status of hydrologic processes at the site will help guide management and restoration efforts. It will also provide insight into ecosystem change, in a landscape with strong human influences.

Objectives

- Assess the relationships between hydrology, surface topography and vegetation at the site.
- Develop and test hypotheses relating to the use hydrologic improvements as restoration tools.
- Establish priorities for larger-scale hydrologic restorations at Weippe Prairie.

2012 Status

This year park managers, staff from the regional National Park Service (NPS) water resources division, and researchers from Colorado State University are installing and monitoring a network of shallow ground water monitoring wells and stream and ditch gauges for the NPS-owned section of the prairie. Additional equipment and data from soil moisture measurements being made by the University of Idaho will also contribute to the overall understanding of the site. Also scheduled is detailed mapping of the channels to help calculate water flow, analysis of air photographs and site management history, and topographic mapping of the area. All analyzed data, including the results of a pilot restoration project on one of the ditches, will be included in a final report.



Lidar image of Weippe Prairie. Green line identifies NPS boundary. Black line on bottom left and arrow indicates the area of the pilot restoration project.

Management Applications

- Provide recommendations and priorities for larger-scale hydrologic restorations at Weippe Prairie
- Support park resource planning and land health reporting efforts
- Give managers insight on past land use

Scientists visiting Jim Ford Creek at Weippe Prairie.

Contact Information
Jannis Jocius, Jannis_Jocius@nps.gov

http://www.nps.gov/nepe/index.htm
http://twitter.com/#!/NezperceNP
http://www.facebook.com/DiscoverNezPerceNationalHistoricalPark